

CLAIMS

1. A process for fabricating electronic components,
in which a first anodizing operation is carried
5 out on a support material (1) in order to form at
least one first pore (3) that extends, in this
support material (1), along a first direction,
characterized in that a second anodizing operation
is carried out in order to form at least one
10 second pore (17) that extends in the support
material (1) along a second direction, different
from the first direction.
2. The process as claimed in claim 1, in which an
15 insulating material is formed in the first pore
(3).
3. The process as claimed in either of the preceding
claims, in which an active material (18) is formed
20 in the second pore (17).
4. The process as claimed in claim 3, in which the
active material (18) is chosen from a conductor, a
semiconductor, a superconductor, a magnetic
25 material and a carbon structure.
5. The process as claimed in either of claims 3 and
4, in which the active material (18) is deposited
in the second pore (17) by electrodeposition.
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6. The process as claimed in claim 5, in which the
active material is a semiconductor material
transparent to light.
- 35 7. The process as claimed in claim 6, in which the
semiconductor material is an organic material.
8. The process as claimed in one of the preceding

claims, in which the support material (1) constitutes both a self-supporting structure for a component (100) and electrical contact means.

- 5 9. The process as claimed in one of the preceding claims, in which a transistor (100) is produced, the source and drain contacts of which are each at one of the ends of the second pore (17), respectively, and a gate contact is produced by
10 depositing a conducting material (13) on the surface layer (5).
10. The process as claimed in one of the preceding claims, in which the support material (1) is in
15 the form of a portion of a wire extending longitudinally parallel to the second direction.
11. The process as claimed in claim 10, in which a plurality of pores, including the first pore, are
20 formed, each extending substantially over the thickness of a surface layer (5) of the wire, radially perpendicular to the second direction.
12. The process as claimed in claim 11, in which the
25 surface layer (5) of the wire constitutes a layer of dielectric.
13. The process as claimed in one of claims 1 to 8, in which at least one active element is enveloped in
30 a matrix comprising the support material (1).
14. The process as claimed in claim 13, in which an electrically conducting material is deposited in at least one of the first (3) and second (17)
35 pores.
15. The process as claimed in either of claims 13 and 14, in which a thermally conducting material is deposited in at least one of the first (3) and

second (17) pores.

16. The process as claimed in one of claims 13 to 15,
in which an optically conducting material is
5 deposited in at least one of the first (3) and
second (17) pores.
17. The process as claimed in one of claims 13 to 16,
in which at least one line of a material chosen
10 from an electrically conducting material, a
thermally conducting material and an optically
conducting material is produced on the surface of
the support material (1), in order to connect the
active element to an external element.
18. The process as claimed in one of the preceding
claims, which comprises at least three treatment
steps in liquid medium, including the first
anodizing operation, the second anodizing
20 operation and an electrodeposition step.
19. An electronic component obtained by the process as
claimed in one of the preceding claims, comprising
an element of support material (1) with at least
25 one first pore that extends along a first
direction and at least one second pore (17) that
extends along a second direction, different from
the first direction.
20. The component as claimed in claim 19, in which the
30 second pore (17) is at least partly filled with an
active material (18).
21. The component as claimed in claim 20, in which the
35 active material (18) is chosen from a conductor, a
semiconductor, a superconductor, a magnetic
material and a carbon structure.
22. The component as claimed in either of claims 20

and 21, in which the active material (18) is transparent to light.

- 5 23. The component as claimed in one of claims 20 to 22, in which the active material (18) is an organic material.
- 10 24. The component as claimed in one of claims 20 to 23, in which a first electrical contact is produced between the active material and the support material, on the bottom of the second pore.
- 15 25. The component as claimed in one of claims 19 to 24, in which the support material constitutes both a self-supporting structure for the component and electrical contact means (21).
- 20 26. The component as claimed in one of claims 19 to 25, in which the element of support material (1) is in the form of a wire portion that extends longitudinally parallel to the second direction.
- 25 27. The component as claimed in claim 26, in which the wire portion includes, at the second pore (17), a surface layer (5) consisting of an electrically insulating material.
- 30 28. The component as claimed in claim 27, in which a second electrical contact, radially external with respect to the surface layer (5), is produced on this surface layer (5).
- 35 29. The component as claimed in one of claims 19 to 25, which includes at least one active element connected via the first (3) and second (17) pores to the surface of the support material (1).